ABSTRACT

There is disclosed an extreme ultraviolet phase shift mask that may be constituted practically by obtaining an appropriate combination of a refractive index with an absorption coefficient, even in the case of a reflection of an extreme ultraviolet radiation. When constituting a phase shift mask (10) having a reflective mask blank with multilayered films (11) that reflects a short ultraviolet light and a first and a second regions (12a) and (12b) formed on the reflective mask blank with multilayered films (11), firstly, with reference to an arbitrary complex refractive index to the extreme ultraviolet radiation and an arbitrary thickness of a film, a phase and a reflectance of a reflected light contained in the extreme ultraviolet radiation based on the above complex refractive index and the above film thickness are specified. Then, each film thickness and each complex refractive index in formative films of the first and the second regions (12a) and (12b) are set based on the specific results of the phase and the reflectance to ensure that the reflected light contained in the exposure light in the first region (12a) and the reflected light contained in the exposure light in the second region (12b) create a prescribed phase difference.